Amendment to the Specification:

Please replace the paragraph beginning at page 5, line 1, with the following paragraph.

In at least some embodiments of the present invention, wafer removal for a region *j* (AR'_j) in the model of step (a) is determined according to the equation:

~~$AR'_j = (c_{11j} \cong x_1 + c_{12j}) \cong t_1 + (c_{21j} \cong x_2 + c_{22j}) \cong t_2 + (c_{31j} \cong x_3 + c_{32j}) \cong t_3 + (c_{41j} \cong x_4 + c_{42j}) \cong t_4 + (c_{51j} \cong x_5 + c_{52j}) \cong t_5$,~~

$AR'_j = (c_{11j} \bullet x_1 + c_{12j}) \bullet t_1 + (c_{21j} \bullet x_2 + c_{22j}) \bullet t_2 + (c_{31j} \bullet x_3 + c_{32j}) \bullet t_3 + (c_{41j} \bullet x_1 + c_{42j}) \bullet t_4 + (c_{51j} \bullet x_5 + c_{52j}) \bullet t_5$,

where x_1, x_2, x_3, x_4, and x_5 are the additional parameter values for polishing steps 1, 2, 3, 4, and 5, respectively; t_1, t_2, t_3, t_4, and t_5 are the polishing times for polishing steps 1, 2, 3, 4, and 5, respectively, and c_{a1j} provides the contribution to wafer removal of the variable x in polishing step a in region j; and c_{a2j} provides the contribution to wafer removal of polishing time in polishing step a. The wafer material removal rate profile may account for tool state by scaling the profile using the scaling factor:

$$\left(1 + k_p \cdot t_p + k_d \cdot t_d + k_{pd} \cdot t_p \cdot t_d\right),$$

where the terms t_p and t_d refer to pad and disk life, respectively, with units of hour; and the terms k_p, k_d and k_{pd} are empirically determined coefficients relating pad and disk life to removal rate.

Please replace the paragraph beginning at page 6, line 9, with the following paragraph.

In at least some embodiments of the present invention, the wafer material removal for a region *j* (AR'_j) in the model of step (a) is determined according to the equation:

~~$AR'_j = (c_{11j} \cong x_1 + c_{12j}) \cong t_1 + (c_{21j} \cong x_2 + c_{22j}) \cong t_2 + (c_{31j} \cong x_3 + c_{32j}) \cong t_3 + (c_{41j} \cong x_4 + c_{42j}) \cong t_4 + (c_{51j} \cong x_5 + c_{52j}) \cong t_5$,~~

$AR'_j = (c_{11j} \bullet x_1 + c_{12j}) \bullet t_1 + (c_{21j} \bullet x_2 + c_{22j}) \bullet t_2 + (c_{31j} \bullet x_3 + c_{32j}) \bullet t_3 + (c_{41j} \bullet x_1 + c_{42j}) \bullet t_4 + (c_{51j} \bullet x_5 + c_{52j}) \bullet t_5$,

where x_1, x_2, x_3, x_4, and x_5 are the additional parameter values for polishing steps 1, 2, 3, 4, and 5, respectively; t_1, t_2, t_3, t_4, and t_5 are the polishing times for polishing steps 1, 2, 3, 4, and 5, respectively, and c_{a1j} provides the contribution to wafer removal of the variable x in polishing step a in region j; and c_{a2j} provides the contribution to wafer removal of polishing time in polishing step a. The wafer material removal rate profile may account for tool state by scaling the profile using the scaling factor:

$$\left(1 + k_p \cdot t_p + k_d \cdot t_d + k_{pd} \cdot t_p \cdot t_d\right),$$

where the terms t_p and t_d refer to pad and disk life, respectively, with units of hour; and the terms k_p, k_d and k_{pd} are empirically determined coefficients relating pad and disk life to removal rate.

Please replace the paragraph beginning at page 7, line 7, with the following paragraph.

In at least some embodiments of the present invention, the model defines wafer removal for a region j (AR'_j) in the wafer material removal rate model according to the equation:

~~$AR'_j = (c_{1j} \cong x_1 + c_{12j}) \cong t_1 + (c_{21j} \cong x_2 + c_{22j}) \cong t_2 + (c_{31j} \cong x_3 + c_{32j}) \cong t_3 + (c_{41j} \cong x_1 + c_{42j}) \cong t_4 + (c_{51j} \cong x_5 + c_{52j}) \cong t_5$~~

$AR'_j = (c_{11j} \bullet x_1 + c_{12j}) \bullet t_1 + (c_{21j} \bullet x_2 + c_{22j}) \bullet t_2 + (c_{31j} \bullet x_3 + c_{32j}) \bullet t_3 + (c_{41j} \bullet x_1 + c_{42j}) \bullet t_4 + (c_{51j} \bullet x_5 + c_{52j}) \bullet t_5$,

where x_1, x_2, x_3, x_4, and x_5 are the additional parameter values for polishing steps 1, 2, 3, 4, and 5, respectively; t_1, t_2, t_3, t_4, and t_5 are the polishing times for polishing steps 1, 2, 3, 4, and 5, respectively, and c_{a1j} provides the contribution to wafer removal of the variable x in polishing step a in region j; and c_{a2j} provides the contribution to wafer removal of polishing time in polishing step a.

Please replace the paragraph beginning at page 8, line 1, with the following paragraph.

In at least some embodiments of the present invention, the wafer removal for a region *j* (AR'_j) in the wafer material removal rate model is determined according to the equation:

~~$AR'_j = (c_{11j} \cong x_1 + c_{12j}) \cong t_1 + (c_{21j} \cong x_2 + c_{22j}) \cong t_2 + (c_{31j} \cong x_3 + c_{32j}) \cong t_3 + (c_{41j} \cong x_1 + c_{42j}) \cong t_4 + (c_{51j} \cong x_5 + c_{52j}) \cong t_5$~~

$$AR'_j = (c_{11j} \bullet x_1 + c_{12j}) \bullet t_1 + (c_{21j} \bullet x_2 + c_{22j}) \bullet t_2 + (c_{31j} \bullet x_3 + c_{32j}) \bullet t_3 + (c_{41j} \bullet x_1 + c_{42j}) \bullet t_4 + (c_{51j} \bullet x_5 + c_{52j}) \bullet t_5,$$

where x_1, x_2, x_3, x_4, and x_5 are the additional parameter values for polishing steps 1, 2, 3, 4, and 5, respectively; t_1, t_2, t_3, t_4, and t_5 are the polishing times for polishing steps 1, 2, 3, 4, and 5, respectively, and c_{a1j} provides the contribution to wafer removal of the variable x in polishing step a in region j; and c_{a2j} provides the contribution to wafer removal of polishing time in polishing step a.

Please replace the paragraph beginning at page 13, line 25, with the following paragraph.

Additional parameters may be included in the model, and the model may be defined as follows:

~~$AR'_j = (c_{11j} \cong x_1 + c_{12j}) \cong t_1 + (c_{21j} \cong x_2 + c_{22j}) \cong t_2 + (c_{31j} \cong x_3 + c_{32j}) \cong t_3 + (c_{41j} \cong x_1 + c_{42j}) \cong t_4 + (c_{51j} \cong x_5 + c_{52j}) \cong t_5$, (2)~~

$$AR'_j = (c_{11j} \bullet x_1 + c_{12j}) \bullet t_1 + (c_{21j} \bullet x_2 + c_{22j}) \bullet t_2 + (c_{31j} \bullet x_3 + c_{32j}) \bullet t_3 + (c_{41j} \bullet x_1 + c_{42j}) \bullet t_4 + (c_{51j} \bullet x_5 + c_{52j}) \bullet t_5, \quad (2)$$

where x_1, x_2, x_3, x_4, and x_5 are the additional parameter values for polishing steps 1, 2, 3, 4, and 5, respectively; t_1, t_2, t_3, t_4, and t_5 are the polishing times for polishing steps 1, 2, 3, 4, and 5, respectively, and c_{a1j} provides the contribution to wafer removal rate of the variable x in polishing step a in region j; and c_{a2j} provides the contribution to wafer removal rate of polishing time in polishing step a. Thus, the model permits inclusion of an unlimited number of processing parameters.